

CLAIMS

1. (Currently Amended) An apparatus comprising:
a flow manager;
a remote logical port (RLP) model to model a remote physical port (RPP); and
a trunk scheduler to schedule transmission units directed to the remote physical port.
2. (Original) The apparatus of claim 1 wherein the flow manager comprises:
a flow shaper; and
a flow parameter database.
3. (Original) The apparatus of claim 1 wherein the flow manager comprises:
an RLP scheduler; and
a flow parameter database.
4. (Original) The apparatus of claim 2 wherein the flow manager further comprises:
an RLP scheduler.
5. (Original) The apparatus of claim 1 wherein the RLP model comprises:
an RLP data structure to hold data indicating characteristics of the RPP; and
an RLP traffic shaper to make a transmission unit eligible consistent with the characteristics of the RPP.
6. (Original) The apparatus of claim 4 wherein the flow manager comprises a plurality of queues, one queue for each flow directed toward the RPP.
7. (Original) The apparatus of claim 6 wherein shaping and scheduling are performed by manipulating pointers to the queues.
8. (Original) The apparatus of claim 1 wherein the trunk scheduler statistically multiplexes an aggregate of the flows directed to a plurality of RPPs.
9. (Original) The apparatus of claim 1 wherein the trunk scheduler operates in a weighted round robin non-work conserving manner.

10. (Original) The apparatus of claim 1 further comprising one of an OC-3 port and a DS-3 port.
11. (Original) A system comprising:
 - a broadband communication link;
 - a demultiplexer coupled to a plurality of physical ports and the broadband communication link; and
 - a network element coupled to the communication link, the network element modeling the plurality of physical ports and providing a two-tier hierarchy of shaping and scheduling of flows directed to the plurality of physical ports.
12. (Original) The system of claim 11 wherein the network element comprises:
 - a first flow shaper to shape a plurality of flows directed to a remote physical port (RPP);
 - a first scheduler to schedule the flows shaped by the first flow shaper to yield a scheduled flow;
 - a second flow shaper to shape the scheduled flow; and
 - a trunk scheduler to schedule the flow shaped by the second flow shaper for transmission to the RPP.
13. (Original) The system of claim 11 further comprising:
 - a plurality of data structures populated with data indicating characteristics of a remote physical port (RPP); and
 - a database populated with flow parameters.
14. (Original) The system of claim 13 wherein a one-to-one correspondence exists between RLP data structures and RPPs.
15. (Original) The system of claim 12 wherein the network element comprises:
 - a queue for each flow directed at a physical port and wherein shaping and scheduling are performed by pointer manipulation.
16. (Original) A method comprising:
 - modeling a plurality of remote physical ports (RPP) as a plurality of remote logical ports (RLP); and

reflecting quality of service from a control aggregator to the plurality of RPPs.

17. (Original) The method of claim 16 wherein reflecting comprises:
shaping a plurality of flows directed to a RPP into a plurality of shaped flows;
scheduling the shaped flow into a scheduled flow;
shaping the scheduled flow into a shaped scheduled flow; and
scheduling the shaped scheduled flow for transmission to the RPP>
18. (Original) The method of claim 16 wherein modeling comprises:
populating a database with an entry indicating an ability of an RPP to handle data.
19. The method of claim 18 wherein modeling further comprises:
creating a data structure for each flow directed to a remote physical port; and
manipulating the data structure to indicate eligibility of a transmission unit
consistent with the ability of the RPP to handle data.
20. (Original) The method of claim 16 further comprising:
statistically multiplexing the flows from the plurality of RLPs to the plurality of RPPs.
21. (Original) The method of claim 16 wherein a one-to-one correspondence exists
between the RLPs and the RPPs.